

U.S.C. §103(a) as being unpatentable over Scifres in view of Sugawara and further in view of Inoue.

Turning first to paragraph 20 on page 5 of the action, the qualification of the indium added to clad layer 25 as a separate layer was not the question raised in the last response. Instead, the question raised was whether layer 25 ceases to be a cladding layer because a portion thereof has the indium injected therein so as to create a strain layer within the cladding layer.

In order that the Examiner should understand the actual argument so as to be able to respond thereto as set forth in MPEP § 707.07(f), it is again noted that cladding layer 25 includes the portions on both sides of the injected strain layer 27. Thus, the portion of layer 25 most distant from active region 29 serves no function besides that of a cladding layer, at least not as disclosed or suggested by Scifres. Accordingly, all of that which has been labeled 25 in Scifres remains part of the hetero-configuration, and that includes the added strain layer 27 and the Office Action continues to misinterpret what constitutes the hetero-configuration of Scifres because it ignores of the cladding layer 25. Consequently, that portion of 25 that is separated from the active layer 29 by the added indium does not cease to be part of the cladding layer any more than it ceases to be part of the hetero-configuration. This is what renders the interpretation of what constitutes the hetero-configuration of Scifres unreasonable.

Once again, the cases cited on page 7 of the Response are noted as to what constitutes a proper "*broadest reasonable interpretation*". Thus, as further noted at page 8, "the attempt to read only the portion of the cladding layer 25 between the strain layer and the active region

29 as a complete cladding layer component of the Scifres hetero-configuration is clearly the type of 'conjectural modification' noted to be improper in Carl Sschenck, A.G. v. Nortron Corp., 218 USPQ 698, 702 (Fed. Cir. 1983) because it is unwarranted by the disclosure of the reference." Clearly, the question is not whether it is reasonable to read the injected indium portion 27 as a layer, the question is whether it is reasonable to read the cladding layer as something besides all of layer 25 that includes also the portion 27 and also whether it is reasonable to read the "hetero-configuration" as not including both portions of 25 as well as layer 27 which is interior to the cladding layer 25.

Of course, the Patent Office may not believe itself bound to read either the claim terminology or the references in a reasonable manner. On the other hand, if the Patent Office has some reasonable manner of reading a "hetero-configuration" as not including the cladding layer disclosed by Scifres as all of layer 25, procedural due process and 35 U.S.C. §132 require that the Patent Office adequately notify Applicant of the reasons underlying their interpretation so that Applicant may best decide how to proceed. Note In re Ludtke, 169 USPQ 563, 565 (CCPA 1971). Note also Gechter v. Davidson, 43 USPQ2d 1030, 1033 (Fed. Cir. 1997) holding that "[n]ecessary findings must be expressed with sufficient particularity to enable our Court, without resort to speculation, to understand the reasoning of the [PTO], and to determine whether it applied the law correctly and whether the evidence supported the underlying and ultimate fact findings. If either the crucial findings on underlying factual issues or the ultimate finding of anticipation is clearly erroneous, the decision must be reversed." (Citation omitted).

Here the question not answered in the Office Action is if all of layer 25 is not a cladding layer, then what function or purpose does that part of 25 which is separated from the active layer 29 by the strain layer 27 serve? Thus, is the PTO suggesting that Scifres teaches that the exterior portion of layer 25 has ceased to function as part of the cladding layer and takes on some other function or purpose. Applicant has carefully scrutinized the reference and can find no such teaching or suggestion therein. However, since the Patent Office's position seems to be that the exterior portion of layer 25 is no longer part of the hetero-configuration (in terms of being part of the cladding layer), it appears that the Patent Office should have no problem explaining how the reference teaches this portion of 25 to perform some other function. In providing such an explanation, it is believed that the Patent Office will also have no problem pointing to the specific portions of the reference supporting its position. See In re Rijckaert, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) which indicates that "when the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference." Moreover, the position of Scifres being relied upon to teach or suggest some purpose as to the part of layer 25 separated from 29 by 27 is believed to be particularly relevant given that Scifres repeatedly refers to the strain layer 27 as being within the cladding layer 25. Note, for example, column 3, lines 12 and 13, column 4, lines 31 and 32, and column 2, lines 42-44. Note also that Scifres defines his heterostructure in terms of reference number 41 in Figure 3 which is shown as including the cladding layers, strain layers and the active layer.

In addition, failing to explain how the strain layer 27 of Scifres can reasonably be said to not lie within the hetero-configuration of this reference, the Office Action further

improperly relies upon the diagrammatical showing of Figure 2 as if it were a drawing of various layers of the device appearing with some intentional scale. In this regard, page 5, paragraph 20, makes it clear that Scifres has been relied upon relative to a showing, apparently as to Figure 2, being superior to anything stated in the specification. However, it is well established that diagrammatic showings of patent drawings which are not stated to be scale cannot be relied upon to reflect relative measurements. Note In re Chitawat, 161 USPQ 224, 226 (CCPA 1969) and In re Wright, 193 USPQ 332, 335 (CCPA 1977). In addition, note In re Turlay, 134 USPQ 355, 360 (CCPA 1962) setting forth that it is "well established that an anticipation rejection cannot be predicated on an ambiguous reference." This decision is particularly relevant given that the PTO there also attempted to improperly rely upon a showing of the reference patent (Fig. 1) without taking into consideration the inconsistent description of the specification. The Court rejected such an approach and found the overall description in light of both the words and the showing to be ambiguous and thus, the lack of a proper reference to rely upon under 35 U.S.C. §102. Since, at the very very least, the situation here is the same in terms of the ambiguities present based upon a comparison of the figures to each other much less the figures to the description in the specification of the reference, it is submitted that no anticipation has been reasonably shown here.

Turning to paragraph 21 of the Action, it is clear that the statement that "Figure 2 shows the clad layers 25 and 31 as having the same thickness" is in error because it ignores the full extent of 25 illustrated in Figure 2, where this layer 25 appears on both sides of 27. This approach of ignoring the clear teachings of Scifres in terms of the indium being injected

into the layer 25 to create internal layer 27 has been used throughout the action, as noted above, and cannot establish anticipation.

Consequently, the anticipation rejection of Claims 1, 6, and 7 over anything fairly taught or reasonably suggested by Scifres is clearly inappropriate and should be withdrawn for the reasons fully set forth above.

Turning to the rejections of Claims 2 and 8 based upon 35 U.S.C. §103(a) as being unpatentable over Scifres in view of Inoue, once again it is noted that the PTO fails to present any reasonable motivation which could be said would have led the artisan to combine these two references relative to the subject matter of Claims 2 and 8. Paragraph 22 of the Action appears to suggest that any two references may be combined based upon any reasoning as long as some benefit to be achieved is stated. However, the actual law is quite different as set forth on page 9 of the last amendment. Thus, simply because two references teach two benefits and are prior art, this alone would not mean that the artisan would automatically combine them much less combine them in a specific manner to obviate specific claim subject matter. The decisions cited on the bottom of page 9 of the previous amendment (In re Wesslau) is again noted as is the fact that the teachings of Inoue cannot be considered divorced from his concern with providing semiconductor devices having epitaxial layers provided on a substrate of different semiconductor materials. Once again, the problem of concern to Inoue is that an epitaxial layer of a compound semiconductor (such as gallium arsenide (GaAs)) which is grown on a silicon (Si) wafer contains a substantial amount of dislocations because of the difference in lattice constant and coefficients of thermal expansion between GaAs and Si. Note again, column 1, lines 41-47. These teachings and the teachings

further noted on page 10 of the previous response clearly have nothing whatsoever to do with the teachings in Scifres which relate to blocking dislocation effects from reaching the active layer of hetero-configuration whereas Inoue was concerned with creating cancellation of dislocations in order to correct the problem as discussed at column 2, lines 47-67. Simply because the results might be the elimination of defect created harm, the fact that the structures are entirely different, the benefits sought are entirely different, the problems solved are entirely different, and that one approach is to block unwanted effects while the other is to cancel them cannot be ignored.

Once again, the requirement for demonstrating a "logical reason apparent from positive, concrete evidence of record" is missing where such a showing much always appear. Note again, In re Regel, 188 USPQ 136, 139, n. (CCPA 1975). If the PTO has reason to believe that any benefits, no matter how disparate, can be used to suggest the combination of reference teachings, the case law in support of such an unusual position should be cited. Moreover, the reasonable expectation of success should also be set forth. See MPEP 2143.02.

Turning to paragraph 23 on page 6, it appears that once again the PTO is misreading the Inoue teaching as to the "dislocation density" of col. 5, lines 30-31 as if it were the same thing as the claimed "defect density", which it is not. Even the most rudimentary consideration of the reference teaching versus the clear meaning of "defect density" establishes the error in the Patent Office position.

Paragraph 24 repeats that all that is needed to establish a *prima facie* case is that the references being combined each disclose benefits. This over simplistic approach to the doctrine of obviousness has been treated above relative to paragraph 22. A *prima facie* case

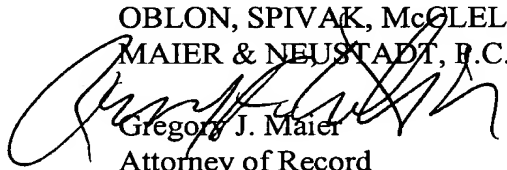
of obviousness requires more than simply that particular structural elements have particular benefits, one must expect those benefits to have some benefit in the structure that they will be used to modify. The courts have, thus, established the above noted doctrine that a reasonable expectation of success must be present which the action again ignores. Moreover, in modifying the basic structure of any reference, the basic operating principle of that device being modified cannot be altered.

As was noted in the paragraph bridging pages 12 and 13 of the last response, merely noting benefits does not explain why the benefits would have led the artisan to have modified the other references, much less does it provide the reasonable expectation of success noted above. Similarly, the traversal of page 13 of the previous response remains unanswered even though M.P.E.P. §707.07(f) indicates that all material that has been traversed, including any rejection, will be responded to in terms of answering the substance of Applicant's argument.

Since no further issues are believed to be outstanding in the present application, it is believed to be in condition for formal allowance. An action to that effect is therefore respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Attorney of Record
Registration No. 25,599
Raymond F. Cardillo, Jr.
Registration No. 40,440

Crystal Square Five - Fourth Floor
1755 Jefferson Davis Highway
Arlington, Virginia 22202
(703) 413-3000
Fax No.: (703) 413-2220
RFC/law